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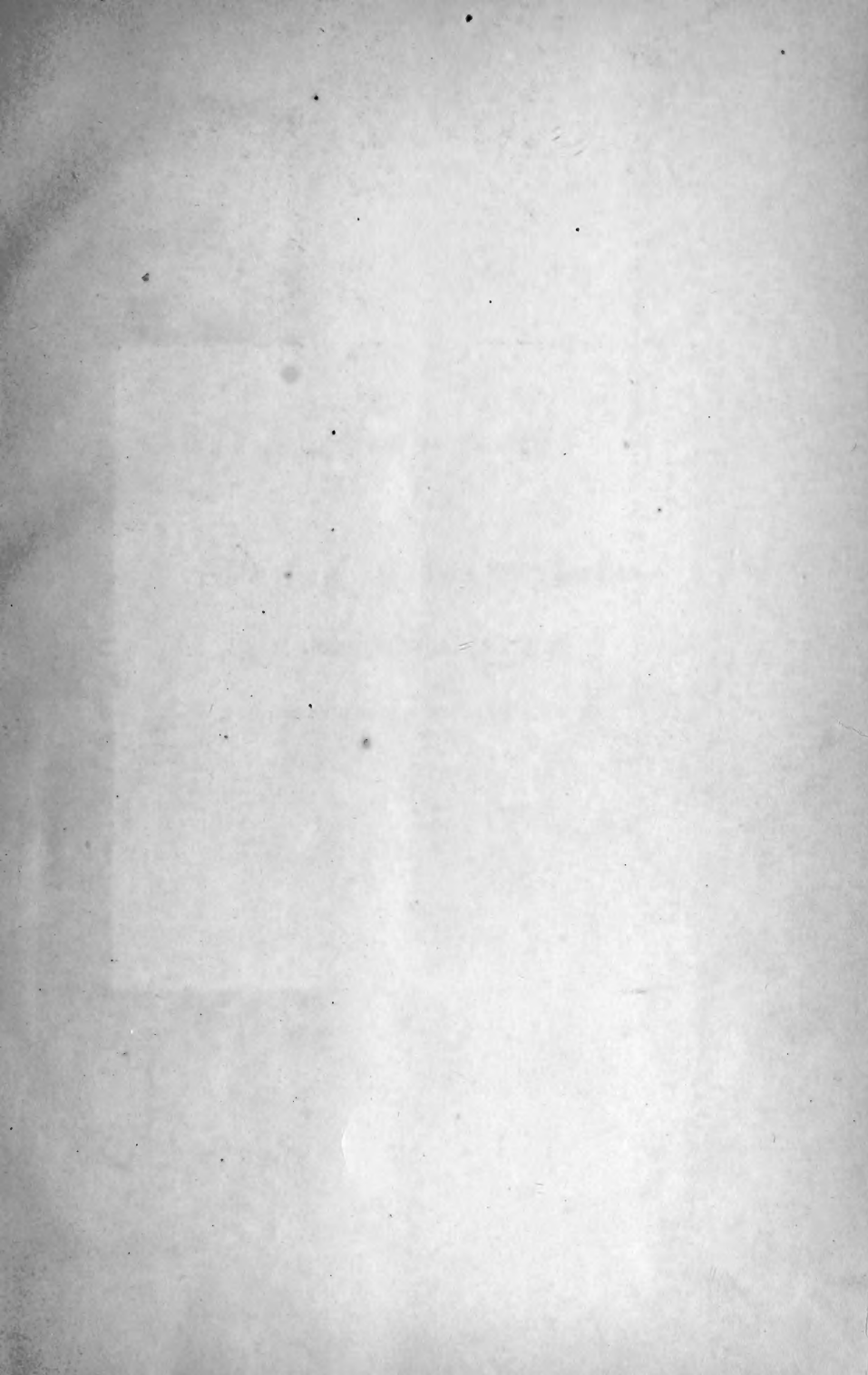
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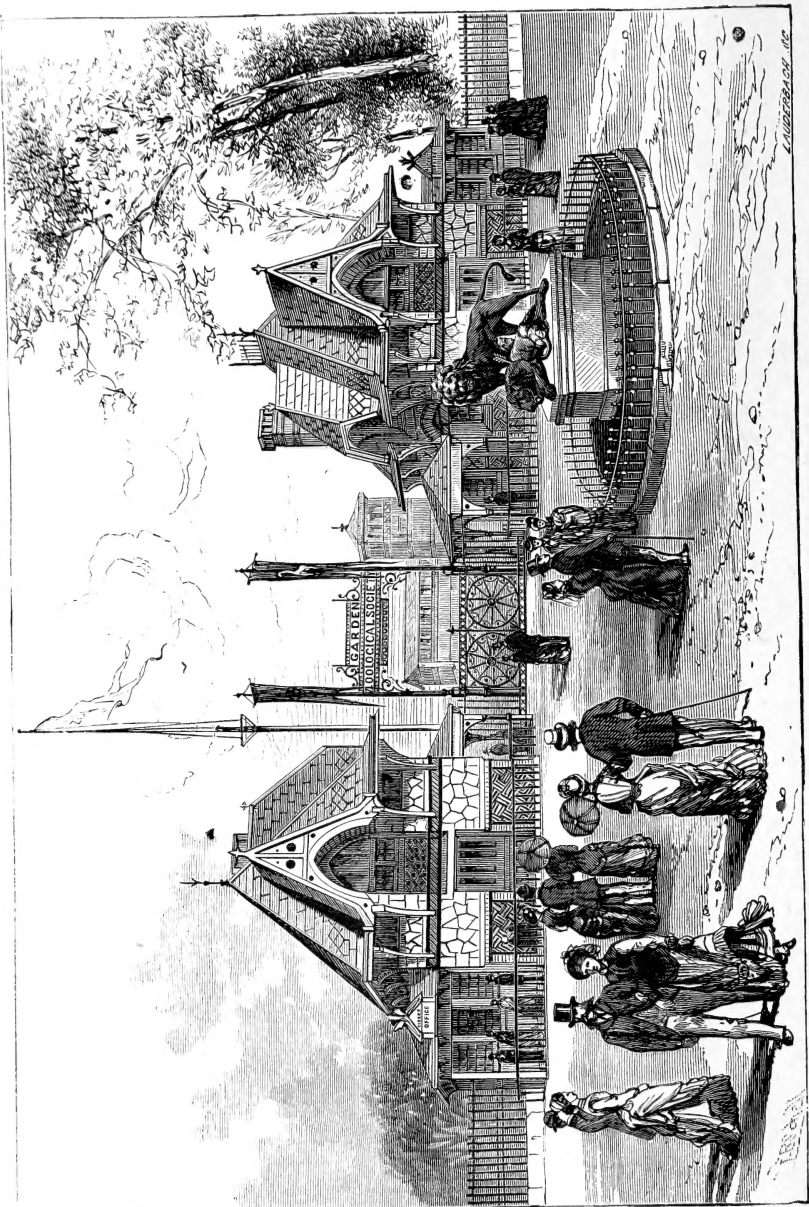
AT HARVARD COLLEGE, CAMBRIDGE, MASS.

Founded by private subscription, in 1861.



No. 6110





GIRARD AVENUE ENTRANCE.

THE
EIGHTH ANNUAL REPORT
OF THE
BOARD OF DIRECTORS
OF THE
ZOOLOGICAL SOCIETY
OF PHILADELPHIA.

(Incorporated March 21st, 1859.)

READ AT THE ANNUAL MEETING OF THE MEMBERS AND LOAN-
HOLDERS OF THE SOCIETY,

APRIL 22d, 1880.

PHILADELPHIA :

1880.

THE
ZOOLOGICAL SOCIETY OF PHILADELPHIA

OFFICE, FAIRMOUNT PARK.

OFFICERS FOR THE YEAR ENDING APRIL 28th, 1881.

PRESIDENT,

WILLIAM S. VAUX.

VICE-PRESIDENTS:

GEORGE W. CHILDS,

|

HENRY LEWIS.

CORRESPONDING SECRETARY,

JOHN L. LECONTE, M. D.

RECORDING SECRETARY

JOHN SAMUEL.

TREASURER,

EDWARD BIDDLE.

DIRECTORS:

FREDERICK GRAFF,
CHARLES W. TROTTER,
J. VAUGHAN MERRICK,
JOHN WAGNER,
WILLIAM H. MERRICK,
FRANCIS T. FASSITT,

S. FISHER CORLIES,
THEO. L. HARRISON,
HENRY C. GIBSON,
ISAAC J. WISTAR,
WILLIAM HACKER,
PROF. JOSEPH LEIDY.

ACTUARY,

CHARLES L. JEFFERSON.

SUPERINTENDENT OF THE GARDEN,

ARTHUR E. BROWN.

SOLICITORS:

SAM'L WAGNER.

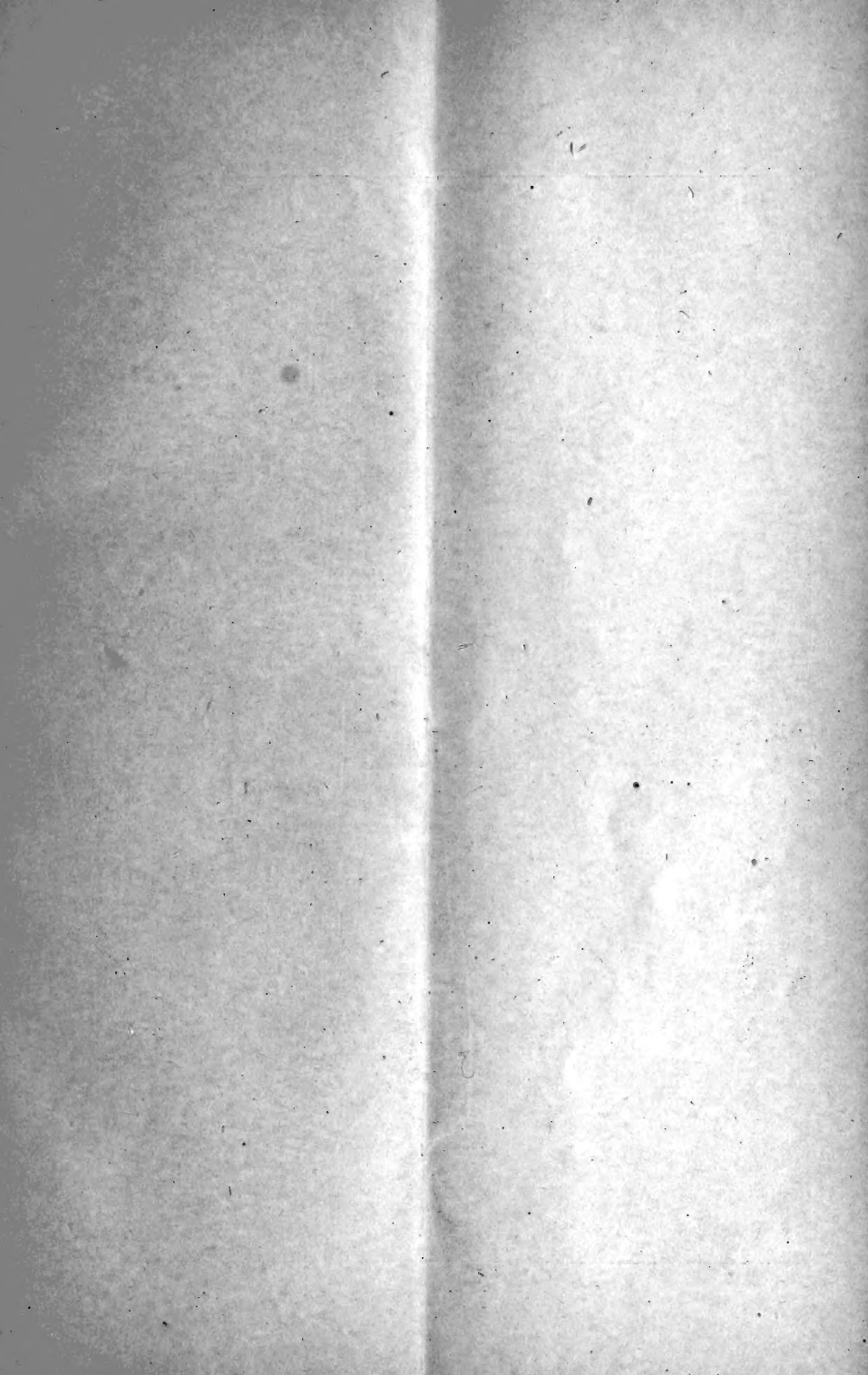
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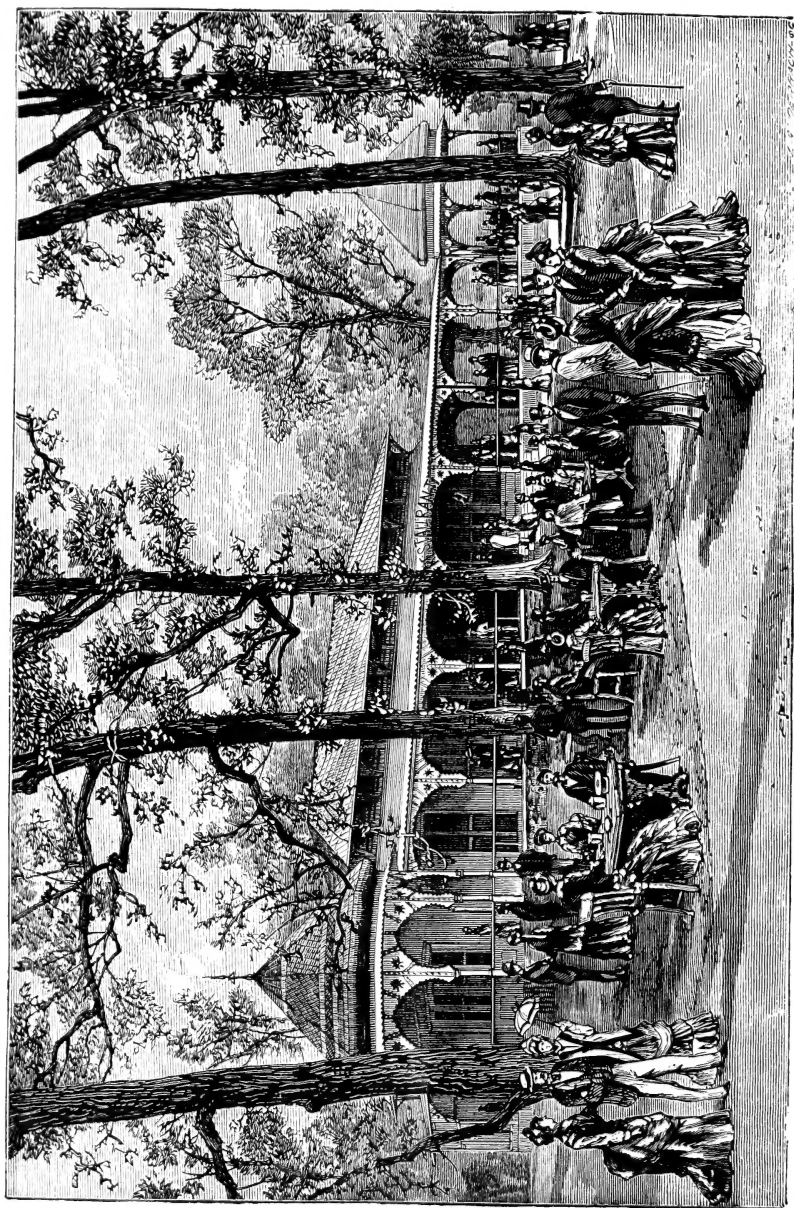
W. W. MONTGOMERY.

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REPORT

OF THE

BOARD OF DIRECTORS.

PHILADELPHIA, April 22d, 1880.

THE Board of Directors of the Zoological Society of Philadelphia submit to the members and loan-certificate holders this their Eighth Annual Report of the business and operations of the Society, from 1st of March, 1879, to 1st of March, 1880.

MEMBERS.

The number of members on the 1st of March, 1880, was—

Annual Members,	652
Life Members,	188
Corresponding Members,	9
Honorary Members,	15

Total Members (exclusive of loan-holders), 864

Decrease, by death or resignation, from preceding year, of seventy-eight Annual Members and an increase of one Honorary Member by the election of Dr. Elliott Coues, U. S. A., of the Smithsonian Institution.

The number of loan-holders is four hundred and eighty-eight.

VISITORS.

The number of visitors to our Garden has not, this year, equaled the expectations of the Directors, there having been a decrease from the preceding year of sixty-four thousand six hundred and five. Notwithstanding this, so great economy has been exercised in the management of the business of the Society, that the average daily receipts have exceeded the average daily expenses by over \$20 a day. Additional means of access to the

Garden are in contemplation, by both steam and passenger railways, which, it is believed, will increase the attendance of visitors.

The following is a report, in detail, of the gate receipts for the year:—

Adults (paying twenty-five cents at gates), . . .	143,826
Children (" ten " "), . . .	40,431
Members (including Life and Annual Members, loan-holders' annual, and complimentary annual tickets), . . .	5,818
Loan-holders' single tickets, . . .	16,492
Free admissions (charitable institutions, donors' tickets, &c.), . . .	2,560
Package tickets, . . .	345
Excursion tickets, . . .	6,662
	<hr/>
	216,134

Monthly Record of Visitors for 1879-80, with corresponding account for 1878-79.

MONTH.	1878-79.	1879-80.	COMPARISON.
March, . . .	11,221	7,568	Decrease, . . 3,653
April, . . .	18,577	13,901	" . . 4,676
May, . . .	50,380	21,928	" . . 28,452
June, . . .	31,109	23,046	" . . 8,063
July, . . .	41,638	28,107	" . . 13,531
August, . . .	33,038	29,583	" . . 3,455
September, . . .	37,564	34,909	" . . 2,655
October, . . .	27,299	22,760	" . . 4,539
November, . . .	10,886	11,695	Increase, . . 809
December, . . .	9,112	5,901	Decrease, . . 3,211
January, . . .	6,560	7,581	Increase, . . 1,021
February, . . .	3,355	9,155	" . . 5,800
	<hr/>	<hr/>	
	280,739	216,134	Decrease, . . 64,605

Average daily admission, 591
The greatest number of visitors on any one day was on
Friday, July 4th, 4,643

*Monthly Record of Receipts from Admissions for 1879-80,
with corresponding account for 1878-79.*

MONTH.	1878-79.	1879-80.	COMPARISON.
March, . .	\$2,129 60	\$1,446 55	Decrease, \$683 05
April, . .	3,503 85	2,701 40	" 802 45
May, . .	7,534 15	4,170 35	" 3,363 80
June, . .	6,097 25	4,353 48	" 1,743 77
July, . .	6,319 90	5,270 82	" 1,049 08
August, .	6,351 96	5,461 89	" 890 07
September,	7,517 70	6,783 77	" 733 93
October, .	5,432 18	4,462 79	" 969 39
November,	2,146 15	2,187 85	Increase, 41 70
December,	1,632 90	1,084 55	Decrease, 548 35
January, .	1,151 25	1,463 70	Increase, 312 45
February,	593 75	1,842 20	" 1,248 45
	\$50,410 64	\$41,229 35	Decrease, \$9,181 29

Average daily receipts from admissions, . . . \$112 65
The largest amount of receipts at the gates on any one
day was on Friday, July 4th, . . . 922 55

*Total Receipts on the several days of the week, and their respective
averages, for 1879-80.*

RANK.	DAYS.	TOTAL RECEIPTS.	AVERAGE.
1	Sunday,	\$16,784 15	\$316 68
2	Thursday, . . .	4,770 20	91 74
3	Saturday, . . .	4,856 48	91 63
4	Friday,	4,516 99	86 87
5	Wednesday, . .	3,924 98	75 48
6	Monday,	3,455 45	66 45
7	Tuesday,	2,921 10	56 17
		\$41,229 35	\$112 65

FINANCES.

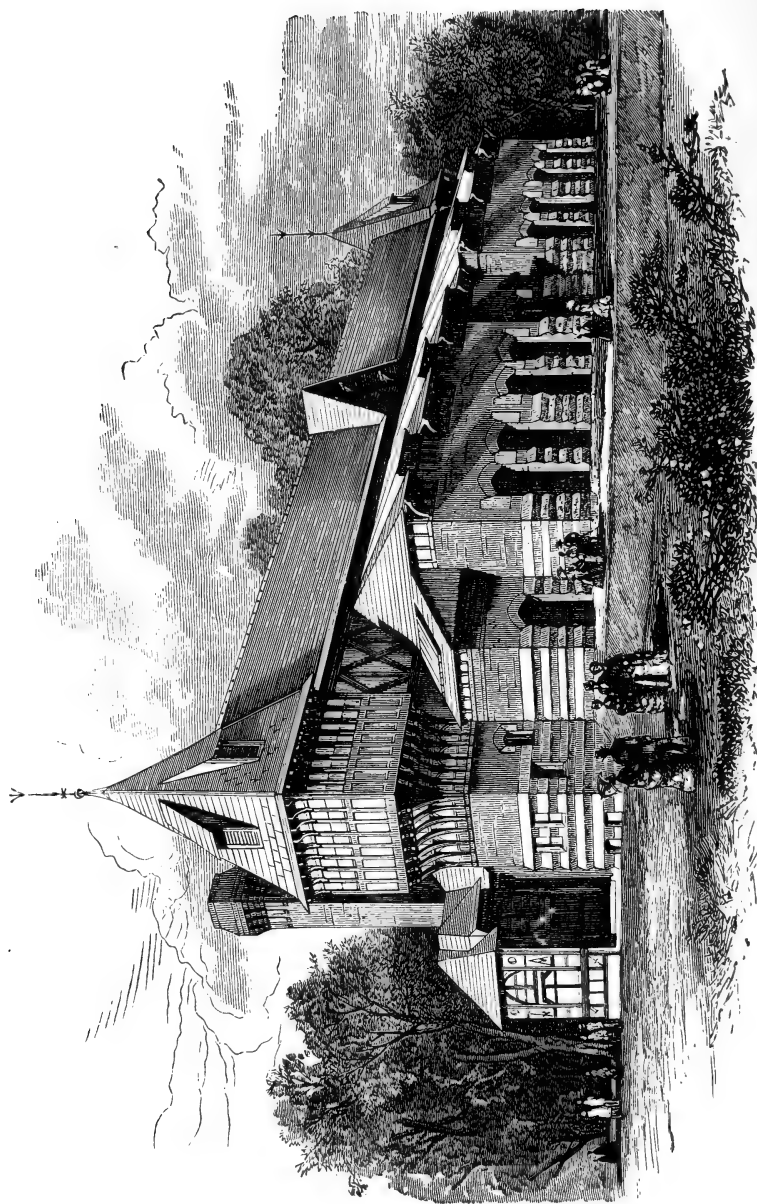
The running expenses of the Garden have been reduced \$2536.56 from that of previous year. It has been thought advisable to consider in our account the depreciation in our buildings and permanent improvements. To this end an estimated loss of \$25,407.04 has been charged to profit and loss account.

The Society has received from the executors of the will of Joseph William Miller, deceased, the sum of \$20,000, which he directed them to invest in the certificates of the Society. As this sum was not received until after 1st of March, 1880, the end of the fiscal year, it does not appear in this year's account.

The financial condition of the Society is shown by the following figures, and the Treasurer's statement and balance-sheet, Appendix A.







ELEPHANT HOUSE.

INCOME AND EXPENDITURES

For the fiscal year ending March 1st, 1880.

INCOME.

Members' initiation fees and dues,	\$517 50	
Admission receipts,	41,229 35	
Rents at Garden,	1,800 00	
Profit on sale of Guides,	32 60	
Sundry receipts,	1,176 26	
		<u>\$44,755 71</u>

EXPENDITURES.

(Exclusive of Permanent Improvements, &c.)

Salaries,	\$16,778 60	
Office expenses,	264 83	
General expenses,	16,089 05	
		<u>\$33,132 48</u>
Estimated loss on animals,	6,829 12	
Interest, discount, &c.,	363 19	
Depreciation in permanent improvements,	25,407 04	
		<u>65,731 83</u>
Balance to debit of profit and loss for year,		<u><u>\$20,976 12</u></u>

CAPITAL.

Receipts and Expenditures for year ending March 1st, 1880.

RECEIPTS.

Life membership,	\$100 00	
Sale of animals,	152 00	
		<u>\$252 00</u>
Add the following amounts charged to profit and loss:—		
Estimated loss on animals,	\$6,829 12	
Depreciation in improvements,	25,407 04	
		<u>32,236 16</u>
		<u>\$32,488 16</u>

EXPENDITURES.

Permanent improvements and animals as per items in Treasurer's state- ment (Appendix A),	\$4,801 30	
Temporary loans paid,	9,000 00	
		<u>13,801 30</u>
Balance,		<u><u>\$18,686 86</u></u>

MENAGERIE.

THE condition of the Menagerie, and the incidents attending the operation of the Garden during the past year, will be found fully set forth in the reports of the General Superintendent and Prosector, Appendices B and C.

The Board acknowledge with thanks the gifts to the Society of an oil painting, "Giraffes," by the artist, Mr. Newbold Trotter, and by Mr. James L. Claghorn of forty-three handsome prints of zoological subjects, framed; also, at the suggestion of the same well-wisher to the Society, the receipt by them of a very fine line engraving in the first state by Schmuizer, after Snyder, of "Eagles on a Dead Wolf," presented to them by Mr. Frederick Keppel, of New York.

The continued kindness of the many friends of the Society in all parts of the country also claims the thanks of the Society.

By order of the Board.

JOHN SAMUEL,
Secretary.

APPENDIX A.

TREASURER'S STATEMENT.

March 1st, 1879, to March 1st, 1880.

DR.

To Balance March 1st, 1879,		\$3,766 47
" Life Membership,		100 00
" Sale of Animals,		152 00
" Members' Fees and Dues,	\$517 50	
" Admission Receipts,	41,229 35	
" Rents at Garden,	1,800 00	
" Profit on sale of Guides,	32 60	
" Sundries,	1,176 26	
Transferred to credit of profit and loss,		44,755 71
		<u>\$48,774 18</u>

CR.

By warrants paid for—		
Salaries,	\$16,778 60	
Office expenses,	264 83	
Subsistence,	8,500 11	
Advertising,	1,854 15	
Fuel and light,	1,058 05	
Printing,	296 51	
Expressage,	102 31	
Repairs,	778 67	
Extra labor and jobbing,	1,002 60	
Hardware and tools,	190 82	
Lumber,	183 26	
Water rent,	1,000 00	
Uniforms and equipment,	181 40	
Insurance,	395 42	
Interest and discount,	363 19	
Sundry expenses,	545 75	
Maintenance, &c., transferred to debit of profit and loss,		\$33,495 67
Amount carried forward,		<u>\$33,495 67</u>

Amount brought forward,	\$33,495 67
Purchase of animals,	\$4,468 12
Horticulture,	144 75
Green-houses,	81 93
Deer-house,	84 30
Signs,	22 20
Total permanent improvements and animals,	4,801 30
Temporary loans,	9,000 00
Balance on hand March 1st, 1880,	1,477 21
	<hr/>
	<u>\$48,774 18</u>

EDWARD BIDDLE,
Treasurer.



APPENDIX B.

To the President and Board of Directors of the Zoological Society,

GENTLEMEN :—I have the honor to submit to you my report of the condition of the Garden of the Society at the present time, and of its operation during the past year.

The Menagerie now comprises

392 Mammals, valued at	.	.	.	\$40,558
415 Birds, valued at	.	.	.	5,875
51 Batrachians,	} valued at	.	.	337
84 Reptiles,				

Total, 942	“	\$46,770
------------	---	----------

Many additions of interest and value have been made to the collection during the year, both by presentation and purchase, the latter mainly through the disinterested and valuable assistance rendered to the Society by one of its honorary members, the Rev. Dan. Greatorex, of London, who has forwarded to the Garden, at different times, several collections of animals containing a number of rare species. Many of the additions require special mention here. In

MARCH,

A pair of American Otter (*Lutra canadensis*) were procured from Nova Scotia, and placed in the vacant seal tank. A remarkably fine male of the Common Leopard (*Felis pardus*) was purchased to replace the one which had died shortly before; and three Sirens (*Sirens lacertina*), were presented by Dr. G. E. Manigault, to whose kind interest the Society has been indebted for several rare batrachians from the Southern States.

APRIL.

Twenty-seven Undulated Grass Parrakeets (*Melopsittacus undulatus*), a Blue-fronted Amazon (*Chrysotis cyanorhynca*), a White-fronted Amazon (*Chrysotis leucocephala*), and an American Whistling Swan (*Cygnus americanus*), were purchased early in

the month. A fine pair of Ostriches (*Struthio camelus*), and a female Oryx antelope (*Oryx leucoryx*), to mate the male previously in the collection, were procured in Boston. The male ostrich unfortunately received injuries during the trip to Philadelphia, which resulted in paralysis, from which he did not recover. This loss is much to be regretted, as, owing to the demand for these birds at the Cape of Good Hope, where they are largely bred for their feathers, they are becoming scarce elsewhere.

A female Macaque Monkey (*Macacus nemestrinus*) was bred during the month, and has been successfully reared. In

MAY,

A pair of European Fallow Deer (*Cervus dama*) were presented by the Earl of Powis, and arrived safely at the Garden.

A pair of European Badgers (*Meles taxus*), a Dusty Ichneumon (*Herpestes pulverulentus*), an Emu (*Dromæus novæ-hollandiæ*), three Bar-headed Geese (*Anser indicus*), two Sebastopol Geese, a Scarlet Ibis (*Ibis rubra*), a Secretary Vulture (*Gypogeranus serpentarius*), two Bauer's Parrakeets (*Platycercus zonarius*), and a Timneh Parrot (*Psittacus timneh*), a rare species from west Africa, were received from London.

A specimen of the Darter or Water Turkey (*Plotus anhinga*), a rare and singular bird of much interest to all classes of visitors, was procured from Florida, and has thriven remarkably well. It is probable that this bird has never before been exhibited in a zoological collection.

Four Ring-necked Pheasants (*Phasianus torquatus*), a great Northern Loon (*Colymbus torquatus*), a little Black-headed Duck (*Fuligula affinis*), a Star-nosed Mole (*Condylura cristata*), and two Javan Chevrotains (*Tragulus javanicus*), were also acquired by purchase.

JUNE.

A pair of Cheetahs (*Felis jubata*), a Bornean Sun Bear (*Helarctos eurypilus*), and an uncommonly fine Chacma Baboon (*Cynocephalus porcarius*), arrived early in the month from England, together with a number of Mandarin Ducks (*Aix galericulata*), a Rose-crested Cockatoo (*Cacatua moluccensis*), and an extensive collection of small Finches from the Australian, African, and Indian regions, belonging mainly to the genera *Estrela*, *Amadina*, *Donacola*, and *Munia*, and containing many species new to the Menagerie.

Two Electrical Eels (*Gymnotus electricus*), and a pair of Red-crested Cardinals (*Paroaria cucullata*), from South America were also purchased.

Several interesting births took place during the month, comprising two Virginia Deer (*Cervus virginianus*), and two Mule Deer (*C. macrotis*), there being twins of each, an American Elk or Wapiti (*C. canadensis*), a litter of thirteen Common Opossums (*Didelphys virginianus*), and two Collared Peccaries (*Dicotyles torquatus*), this being the first time either of the last two species has bred in the Garden.

JULY.

A large collection of animals was received in very good order from London, among which may be mentioned a Marabout Stork (*Leptoptilus crumeniferus*), two Black-tailed Parrakeets (*Polytelis melanurus*), a somewhat rare species from Australia, four Laughing Kingfishers (*Dacelo gigantea*), two White-backed Piping Crows (*Gymnorhina leuconota*), a scarce Lemur, the Grand Galago (*Galago crassicaudata*), from the east coast of Africa, an Emu (*Dromæus novæ-hollandiæ*), two rare species of Cockatoo (*Cacatua ducorpsi* and *C. sulphurea*), a White Goshawk (*Astur novæ-hollandiæ*), and two Hyacinthine Porphyrios (*Porphyrio hyacinthinus*).

A Nine-banded Armadillo (*Dasypus novem-cinctus*) was procured from Texas, and two Collared Peccaries, one Mule Deer, and five Woodchucks (*Arctomys monax*), were bred during the month.

AUGUST.

Thirty-two specimens of one of our western batrachians (*Amblystoma mavortium*) were procured at Como, Wyoming Territory, and forwarded to the Garden by Prof. E. D. Cope. With them were also ten of the aquatic, immature form of the species, the so-called *Siredon lichenoides*. The last were placed in an aquarium tank under conditions which hindered, without absolutely preventing them from access to air which might be breathed through the lungs; and it has been interesting to observe that while four of them speedily completed the development into their adult, *amblystoma* form, which has been fully described by Dumeril, Kölliker, and others, the remaining six have shown no inclination to the change, but remain in the same condition as when received.

Two Sand Toads (*Bufo vulgaris*) from England, and several specimens of North American reptiles of some rarity, *Heterodon platyrhinos atmodes*, *Bascanion flagelliforme*, and *Phrynosoma douglassi*, were presented.

A Black Ape (*Cynopithecus niger*), a Moor Macaque (*Macacus maurus*) and two Ashy-black Macaques (*M. ocreatus*), all rare and interesting species of monkeys, were received from London. A West African Python (*Python sebæ*), and an Egyptian Cobra (*Naia haje*), were also purchased, but on arrival were unfortunately found to be dead.

SEPTEMBER.

Two European Squirrels (*Sciurus vulgaris*), three Black-handed Spider Monkeys (*Ateles melanochir*) from Central America, a Say's Rattlesnake (*Crotalus confluentus*) from Colorado, a Parasitic Jäeger Gull (*Stercorarius parasiticus*), and a Booby Gannet (*Sula fiber*), were the principal acquisitions during this month. The latter bird, though rarely ranging above the extreme Southern States on our coast, was captured off Cape Henlopen, having been driven north, without doubt, by the southerly winds which has been prevailing for some weeks. In

OCTOBER,

A young female Orang-utan (*Simia satyrus*) arrived from London, and was placed in the vacant chimpanzee cage, which had been fitted with improved heating and ventilating apparatus. It has, so far, remained in excellent condition, and has proved to be an attractive feature of the collection. It was accompanied by a Diana Monkey (*Cercopithecus diana*), a Mozambique Monkey (*C. rufoviridis*), a Saddle-billed Stork (*Xenorhynchus senegalensis*), and a Spotted Eagle (*Aquila nævia*), all new to the Menagerie.

An opportunity was afforded early in the month of purchasing a collection of animals from South America, among which were a fine female Tapir (*Tapirus terrestris*), which the Society has long desired to complete a pair, four Yarrell's Curassows (*Crax carunculata*), four Razor-billed Curassows (*Mitua tuberosa*), a Red-breasted Guan (*Penelope pileata*), eighteen Boa Constrictors, and two curious monkeys of the genus *Cebus*, which are yet unidentified, but which seem to resemble *Cebus elegans* of Is. Geoff.

A young male Eland (*Oreoscanna*), and a pair of Black Wolves (*Canis occidentalis ater*), were received in exchange from the

Zoological Garden at St. Louis. A rare variety of the Hog-nosed Snake (*Heterodon simus nasicus*), was also received from Colorado.

NOVEMBER.

A Javan Chevrotain (*Tragulus javanicus*), was bred in the Garden, and two hawks were received from the Western States in such bad condition as to render their determination almost impossible; they are believed, however, to be the young of Swainson's Buzzard (*Buteo swainsonii*), a somewhat rare species from the far west.

DECEMBER.

A Naked-eared Squirrel Monkey (*Saimaris ustus*) from Guiana, received by donation, and a female Mazame Deer (*Cervus campestris*), a South American species, was bred.

JANUARY, 1880.

Three Coypus (*Myopotamus coypus*) from South America, a Great Kangaroo (*Macropus giganteus*), and a Red Kangaroo (*M. rufus*), were the principal additions for this month, the former by presentation, the other two by birth.

FEBRUARY

Brought the year to a close with the arrival from London of four Vulturine Guinea-fowls (*Numida vulturina*), a rare and beautiful species from the east coast of Africa.

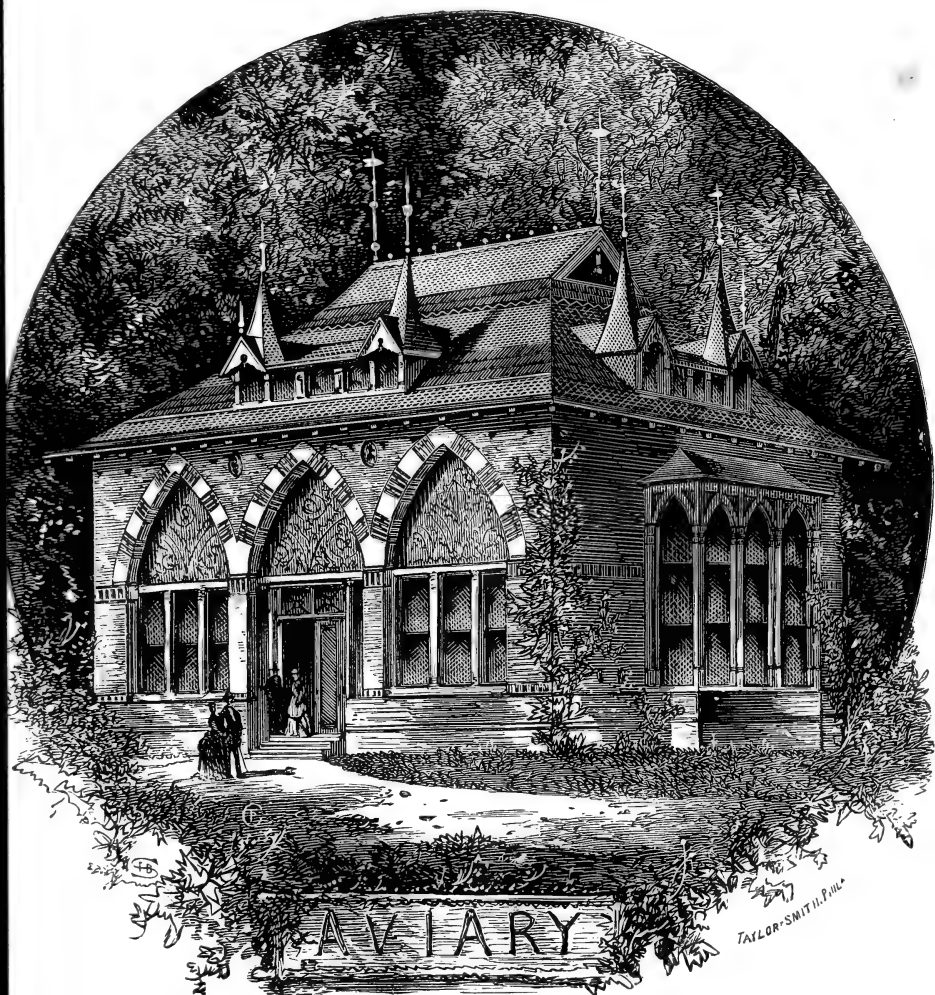
The species altogether new to the collection, which have been exhibited, are greater in number and variety than during any previous year of the Society, except the first. Although many of them have already been referred to, a complete list is here given:—

MAMMALIA.

PRIMATES:—

- Orang-utan (*Simia satyrus*), Borneo and Sumatra.
- Diana Monkey (*Cercopithecus diana*), West Africa.
- Mozambique Monkey (*C. rufo-viridis*), Mozambique.
- Ashy-black Macaque (*Macacus ocreatus*), Celebes.
- Moor Macaque (*M. maurus*), Borneo.





Black Ape (*Cynopithecus niger*), Philippines.

Slender Cebus (*Cebus elegans*), Brazil.

Naked-eared Squirrel Monkey (*Saimaris ustus*), Brazil and Guiana.

Rough-tailed Galago (*Galago crassicaudata*), East Africa.

INSECTIVORA :—

Star-nosed Mole (*Condylura cristata*), United States.

CARNIVORA :—

Cheetah (*Felis jubata*), Asia and Africa.

Dusty Ichneumon (*Herpestes pulverulentus*), South Africa.

European Badger (*Meles taxus*), Europe.

RODENTIA :—

European Squirrel (*Sciurus vulgaris*), Europe.

Meadow Mouse (*Arvicola riparia*), Eastern United States.

Pouched Gopher (*Geomys bursarius*), Western United States.

Coypu (*Myopotamus coypus*), South America.

UNGULATA :—

Javan Chevrotain (*Tragulus javanicus*), Java.

EDENTATA :—

Nine-banded Armadillo (*Dasypus novem-cinctus*), Central America.

AVES.

PASSERES :—

Scarlet Tanager (*Pyrranga rubra*), United States.

American Goldfinch (*Chrysomitris tristis*), United States.

Saffron Finch (*Sycalis flaveola*), South America.

Chipping Sparrow (*Spizella socialis*), North America.

English Sparrow (*Passer domesticus*).

Zebra Finch (*Estrela subflava*), Africa.

Orange-cheeked Finch (*E. melpoda*), Africa.

Amaduvade Finch (*E. amaduva*), India.

Cutthroat Finch (*Amadina fasciata*), Africa.

Spotted-sided Finch (*A. lathamii*), Australia.

Chestnut-eared Finch (*A. castanotis*), Australia.

Bicolored Finch (*A. bicolor*), Australia.

Spotted Munia (*Munia undulata*), India.

Maja Finch (*M. maja*), India.

Black-headed Finch (*M. malacca*), India.

Sharp-tailed Finch (*M. acuticauda*), India.

Chestnut-breasted Finch (*Donacola castaneothorax*) Queensland.

PSITTACI :—

Ducorp's Cockatoo (*Cacatua ducorpsi*), Solomon Islands.

Lesser Sulphur-crested Cockatoo (*C. sulphurea*), Moluccas.

Barnard's Parrakeet (*Platycercus barnardi*), Australia.
 Black-tailed Parrakeet (*Polytelis melanurus*), Australia.
 Timneh Parrot (*Psittacus timneh*), West Africa.

RAPTORES :—

White Goshawk (*Astur novæ-hollandiæ*), Australia.
 Swainson's Buzzard (*Buteo swainsonii*), United States.
 Spotted Eagle (*Aquila nævia*), Europe and Asia.
 Secretary Vulture (*Gypogeranus serpentarius*), South Africa.

GALLINÆ :—

Razor-billed Curassow (*Mitua tuberosa*), Brazil.
 Red-breasted Guan (*Penelope pileata*), Brazil.
 Vulturine Guinea-fowl (*Numida vulturina*), East Africa.

GRALLATORES :—

Little Blue Heron (*Ardea cœrulea*), United States.
 Saddle-billed Stork (*Xenorhynchus senegalensis*), West Africa.
 Clapper Rail (*Rallus longirostris*), United States.
 Hyacinthin Porphyrio (*Porphyrio hyacinthinus*), Europe.

LAMELLIROSTRES :—

Whistling Swan (*Cygnus americanus*), North America.
 Bar-headed Goose (*Anser indicus*), India.
 Sebastopol Goose (*Domestic var.*).
 Mandarin Duck (*Aix galericulata*), China.

GAVIDÆ :—

Parasitic Jäger Gull (*Stercorarius parasiticus*), North Atlantic.

STEGANOPODES :—

Booby Gannet (*Sula fiber*), South Atlantic.
 Darter (*Plotus anhinga*), Southern United States.

STRUTHIONIDES :—

Emu (*Dromæus novæ-hollandiæ*), Australia.

BATRACHIA.

URODELA :—

Amblystoma (*Amblystoma mavortium*), Western United States.

ANURA :—

Sand Toad (*Bufo vulgaris*), Europe.

REPTILIA.

OPHIDIA :—

Say's Rattlesnake (*Crotalus confluentus*), Colorado.
 Massasauga Rattlesnake (*Caudisonia tergemina*), Western United States.
 Water Snake (*Tropidonotus leberis*), United States.
 Hog-nosed Snake (*Heterodon simus nasicus*), Western United States.





LACERTILIA :—

Horned Lizard (*Phrynosoma douglassi*), Western United States.

PISCES.

GYMNOTIDÆ :—

Electrical Eel (*Gymnotus electricus*), South America.

The animals bred in the Menagerie during the year were as follows :—

- 1 Macaque Monkey (*Macacus nemestrinus*).
- 3 Prairie Wolves (*Canis latrans*).
- 1 Zebu (*Bos indicus*).
- 2 Buffalo (*Bison americanus*).
- 3 Virginia Deer (*Cervus virginianus*).
- 3 Mule Deer (*Cervus macrotis*).
- 2 Wapiti (*Cervus canadensis*).
- 1 Fallow Deer (*Cervus dama*).
- 1 Mazame Deer (*Cervus campestris*).
- 1 Javan Chevrotain (*Tragulus javanicus*).
- 4 Collared Peccaries (*Dicotyles torquatus*).
- 1 Bactrian Camel (*Camelus bactrianus*).
- 5 Woodchucks (*Arctomys monax*).
- 7 White-footed Mice (*Hesperomys leucopus*).
- 37 Common Opossums (*Didelphys virginiana*).
- 2 Red Kangaroos (*Macropus rufus*).
- 3 Great Kangaroos (*Macropus giganteus*).
- 1 Rat Kangaroo (*Hypsiprymnus rufescens*).
- 15 Banded Rattlesnakes (*Crotalus horridus*).
- 5 Moccasins (*Ancistrodon piscivorus*).
- 27 Water Snakes (*Tropidonotus fasciatus*).

The estimated loss by death is \$6829, which was largely contributed to by a female Giraffe, a female African Elephant, a female Hair Seal, and a male South American Tapir. To this may be added a Javan Leopard, an Ostrich, a pair of Cheetahs, a young male Bactrian Camel, and a Moose.

Attempts to raise the Mule Deer (*Cervus macrotis*), which has bred quite freely in the Garden, have been met with the same failure which has attended them elsewhere, outside of the range of their natural distribution. Three of the young which were bred last year and one born in 1878, were lost during the summer from cancerous affections of the stomach. There would appear to be some nutritive requirement not yet understood, which has not, and possibly can not, be afforded them under domestication, but which is essential to their proper development.

A number of the South American Boas, purchased in September, with several which had previously been in the Garden, have died during the winter from disease showing a diphtheretic condition of the alimentary canal, and which there is some reason to believe is contagious in its nature. Several modes of treatment have been applied with no avail, and as destruction of tissue may proceed to a considerable extent in the lower classes of vertebrates without evident impairment of the vital powers, it appears probable that in these animals, before the symptoms of disease become apparent, it has progressed so far that medical treatment is useless.

A number of carcasses of animals which have died in the Menagerie have been purchased by various scientific institutions and individuals, and others have been deposited in the museums of the Academy of Natural Sciences of Philadelphia and the University of Pennsylvania.

During the spring and early part of the summer, the large Indian Elephant was put in a course of training and was daily exercised at carrying passengers in a "howdah" on her back. This means of diversion was opened to the public on the 23d of July and continued daily as long as the season permitted. As had been anticipated, it became extremely popular with all classes of visitors and furnished a small source of revenue to the Society.

With the exception of such current repairs as have been urgently required, and a small amount of grading towards the south and eastern end of the grounds, no work has been undertaken at the Garden.

Accompanying my report will be found a complete list of the additions to the Menagerie from all sources during the year.

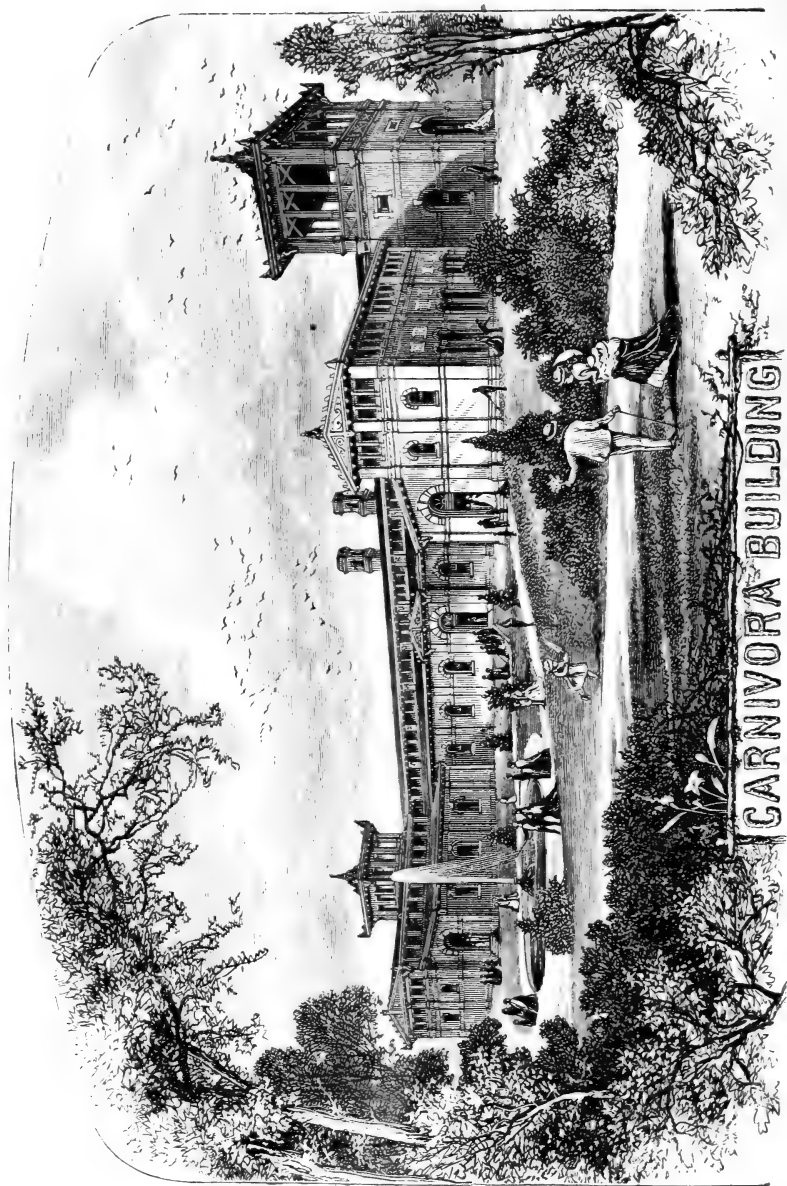
Respectfully,

ARTHUR E. BROWN,
Superintendent.

ZOOLOGICAL GARDEN, March 1st, 1880.







APPENDIX C.

MARCH 1st, 1880.

To the Board of Directors of the Philadelphia Zoological Society,

GENTLEMEN:—I respectfully submit the following list of the animals examined by me, with the causes of death, so far as could be ascertained, which have died in the Garden during the past year. The steadily diminishing relative mortality of the past three years I attribute to the better hygienic measures observed in the construction of the cages, the character of the food, the maintenance of proper temperature, &c. The neglect of such measures is the most fertile source of disease in menageries, which no drugs or medical treatment can remedy. The causes of death during the past year, it will be seen, are such as are inherent to the nature of animals confined under conditions often unavoidably different from those in a state of nature, and which no foresight can prevent. Considering the peculiarities of our climate, &c., I think the Board can congratulate itself upon the general good health of the Garden.

LIST OF ANIMALS UPON WHICH POST-MORTEM EXAMINATIONS WERE MADE.

NO.	DATE.	NAME OF ANIMAL.	CAUSE OF DEATH.
1879.			
1.	March	5. Puma (<i>Felis con</i>).	Congestion of liver.
2.	"	17. <i>Amphiuma means</i> .	No organic disease.
3.	"	31. Giraffe (<i>Camelopardalis giraffa</i>).	Renal calculi.
4.	April	7. Leopard (<i>Felis pardus</i>).	Pneumonia.
5.	May	29. Bat (<i>Pteropus med</i>).	No organic disease.
6.	"	30. Baboon (<i>Cynoceph. sphinx</i>).	Epilepsy.
7.	"	31. Fallow deer (<i>Dama vulg.</i>).	Fibroid tumor of abdomen.
8.	June	6. Badger (<i>Meles taxus</i>).	Heart disease—hypertrophy.
9.	"	20. Java Peacock (<i>Pavo mut</i>).	Heart disease—pericarditis.
10.	"	23. Ostrich (<i>Struthio camelus</i>).	Congestion of spinal cord.
11.	July	8. Bat (<i>Pteropus med</i>).	No organic disease.
12.	"	10. African Elephant (<i>E. africanus</i>).	Dysentery.
13.	Oct.	26. Wolf (<i>Canis occident</i>).	Intussusception.

NO.	DATE.	NAME OF ANIMAL.	CAUSE OF DEATH.
1879.			
14.	Oct.	27. Emu (<i>Dromæus nov. holl.</i>).	Heart disease—pericarditis.
15.	"	31. Sea Lion (<i>Zalophus gillesp.</i>).	Hemorrhage.
16.	Nov.	21. Pigmy Deer (<i>Tragulus javan.</i>).	Paralysis of heart.
17.	"	23. Electric Eel (<i>Gymnotus elec.</i>).	No organic disease.
18.	"	25. Pigmy Deer (<i>Tragulus javan.</i>).	Congestion of lungs.
19.	"	25. Macaque Monkey (<i>Mac. ochreatus</i>).	Hydatids of liver.
20.	Dec.	17. Macaque Monkey (<i>Mac. ochreatus</i>).	Inflammation of intestines.
21.	"	18. Paca (<i>Cælogenys pac.</i>).	No organic disease.
22.	"	18. Bassaris (<i>Bas astuta</i>).	Congestion of lungs.
23.	"	23. Capromys (<i>Cap pilorides</i>).	Convulsions.
24.	"	23. Secretary Bird (<i>Gypogeranus serp.</i>).	No organic disease.
25.	"	23. Emu (<i>Dromæus nov. holl.</i>).	Pericarditis.
26.	"	24. Mule Deer (<i>Cervus macrotis</i>).	Congestion of lungs.
1880.			
27.	Jan.	12. Indian Civet (<i>Viverra ind.</i>).	Tape worms—tænia.
28.	"	23. Boa Constrictor.	Inflammation of intestines.
29.	"	31. Boa Constrictor.	Inflammation of intestines.
30.	Feb.	8. Chimpanzee (<i>Trog. niger</i>).	Gastro-intestinal catarrh.
31.	"	15. Orang (<i>Simia satyrus</i>).	Meningitis.
32.	"	24. Tapir (<i>Tupirus americ.</i>).	Pleuro-pneumonia.

Respectfully,

HENRY C. CHAPMAN,
Prosector.



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Received by the Society, 1879-80.

WISCONSIN ACADEMY OF SCIENCES, ARTS, AND LETTERS.

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Bulletin. 1877.

CINCINNATI SOCIETY OF NATURAL HISTORY.

Journal. Vol. II., Nos. 2 and 3.

U. S. GEOLOGICAL AND GEOGRAPHICAL SURVEY OF THE TERRITORIES.

Bulletin. Vol. IV., Nos. 1 to 4.

Birds of the Colorado Valley (COUES). Part I.

U. S. ENTOMOLOGICAL SURVEY.

Report. 1877.

SMITHSONIAN INSTITUTION.

Report. 1877.

FAIRMOUNT PARK ART ASSOCIATION, PHILADELPHIA.

Seventh Annual Report.

DR. H. C. YARROW AND H. W. KERSHAW.

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List of Marine Fishes collected on the coast of California, near Santa Barbara. 1878.

CENTRAL PARK MENAGERIE, NEW YORK.

Report of Director. 1878.

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Report of Curators of Museum. 1879.

MUSEUM OF COMPARATIVE ZOOLOGY, CAMBRIDGE, MASS.

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LITERARY AND PHILOSOPHICAL SOCIETY OF LIVERPOOL.

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Mollusca Regionis Arctica Norvegiæ (Sars) I.

ZOOLOGICAL AND BOTANICAL SOCIETY OF VIENNA.

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NATURAL-HISTORY SOCIETY OF ZURICH.

Vierteljahrsschrift. 1876, 1877, 1878.

NATURAL-HISTORY SOCIETY OF BASEL.

Verhandlungen. Sechster Theil. Viertes Heft.

ZOOLOGICAL SOCIETY OF HAMBURG.

Seventeenth Annual Report.

ZOOLOGICAL SOCIETY OF LOMBARDY FOR THE PROTECTION OF ANIMALS.

Bulletino II., No. 2, 1878.

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Jornal de Sciencias Mathematicas, &c. Tomo 1-5.

Conferencias celebrados, &c. Tomo 1-3.

Sessao Publico. 1875-77.

SOCIETY OF ARTS AND SCIENCES, BATAVIA, JAVA.

Tijdschrift XXI., 5-6; XXII., 4-6; XXIII., 1-4; XXIV., 4-5.

Notulen XII., 4; XIII., 1-4; XIV. and XV.

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2d Vervolg Catalogus der Bibliotheek.

Kawie Oorkoonden (Cohen Stuart).

Medal commemorating One Hundredth Anniversary.

ROYAL SOCIETY OF NEW SOUTH WALES.

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Report on Railways of New South Wales. 1876.

Report of Department of Mines. 1877.

Remarks on the Sedimentary Formation of New South Wales (Clark).

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Proceedings. Vol. II., 2-4; Vol. III., 1-4.

ZOOLOGICAL SOCIETY OF CALCUTTA.

Report of Honorable Committee of Management. 1877-78.

Report of Honorable Committee of Management. 1878-79.

List of Animals.



APPENDIX D.

LIST OF ADDITIONS TO THE MENAGERIE DURING THE YEAR ENDING FEBRUARY 29th, 1880.

1879.

- March 1. 1 Weeper Capuchin (*Cebus capucinus*). ♀ Presented by J. P. Huston, Philadelphia.
- 3 Otters (*Lutra canadensis*). Purchased.
3. 1 Bactrian Camel (*Camelus bactrianus*). ♀ Born in Garden.
- 6 Prairie Grouse (*Cupidonia cupido*). Presented by Charles W. Matthews, Philadelphia.
7. 1 Otter (*utra canadensis*). Purchased.
8. 2 Garter Snakes (*Eutania sirtalis*). Presented by Daniel Williams, Philadelphia.
9. 1 Leopard (*Felis pardus*). ♂ Purchased.
- 1 Virginia Quail (*Ortyx virginianus*). Presented by C. J. Onderdonk, Philadelphia.
10. 3 Sirens (*Siren lacertina*). Presented by Dr. G. E. Manigault, Charleston, S. C.
11. 1 Canvas-backed Duck (*Fuligula vallisneria*). Presented by H. W. Biddle, Philadelphia.
12. 1 Black Bear (*Ursus americanus*). Presented by John E. Frey, Johnstown, Pa.
13. 1 Yellow-shafted Woodpecker (*Colaptes auratus*). Presented by John Pearsall, Philadelphia.
15. 1 Herring Gull (*Larus argentatus*). Presented by J. B. Jones, Camden, N. J.
25. 1 Crow (*Corvus americanus*). Presented by D. W. Kolbe, Philadelphia.
28. 1 Coati (*Nasua nasica*). Purchased.
- 1 Weeper Capuchin (*Cebus capucinus*). Presented.
29. 1 Zebu (*Bos indicus*). Born in Garden.
- 2 Young Alligators (*Alligator mississippiensis*). Presented by M. Baehert, Boston, Mass.
30. 1 Woodchuck (*Arctomys monax*). Presented by Dr. P. L. Benner, Philadelphia.
31. 1 White Rat (*Mus decumanus*). Presented by Samuel Matthews, Philadelphia.
- April 3. 27 Undulated Grass Parrakeets (*Melopsittacus undulatus*). Purchased.
- 1 Red and Yellow Macaw (*Ara chloroptera*). Purchased.
4. 2 Young Alligators (*Alligator mississippiensis*). Presented by Dr. Alfred Wheelen, Philadelphia.
- 1 Red-shouldered Hawk (*Buteo lineatus*). Presented by A. A. Matlock, Philadelphia.
- 1 Barn Owl (*Strix flammea americana*). Purchased.

1879.

- April 5. 1 Red-headed Duck (*Fuligula ferina americana*). Presented.
 2 Rabbits. Presented by Charles Service, Philadelphia.
6. 1 Macaque Monkey (*Macacus nemestrinus*). Born in Garden.
8. 2 Bald Eagles (*Haliaetus leucocephalus*). Presented by M. Abrahamson, Philadelphia.
- 4 Young Alligators (*Alligator mississippiensis*). Presented by Master George W. Drexel, Philadelphia.
9. 1 Broad-winged Hawk (*Buteo pennsylvanicum*). Purchased.
10. 1 White-fronted Parrot (*Chrysotis leucocephalus*). Purchased.
 1 Blue-fronted Parrot (*Chrysotis cyanorhynca*). Purchased.
 1 Indigo Bird (*Cyanospiza cyanea*).
 1 Nonpareil (*Cyanospiza ciris*).
 1 Weaver Bird (*Chera progne*). } Presented by R. A. Stoeckle, Philadelphia.
- 1 Alligator (*Alligator mississippiensis*). Presented by August Joly, Philadelphia.
11. 1 White Rat (*Mus decumanus*). Presented by Masters Broadbent, Philadelphia.
 1 Pouched Rat (*Geomys bursarius*). Presented by Charles Aldrich, Webster City, Iowa.
12. 1 Whistling Swan (*Cygnus americanus*). Purchased.
15. 1 Pair Ostriches (*Struthio camelus*). Purchased.
 1 Oryx (*Oryx leucoryx*). ♀ Purchased.
 1 Red Monkey (*Cercopithecus ruber*).
 1 Green Monkey (*Cercopithecus callitrichus*). } Presented by F. Nash, Philadelphia.
- 1 Weeper Capuchin (*Cebus capucinus*). Presented by Joseph R. Sage, Philadelphia.
16. 2 Garter Snakes (*Eutania sirtalis*). Presented by William Griscom, Philadelphia.
18. 1 Fox's Black Snake (*Coluber vulpinus*). Presented by Dr. J. H. Pooley, Columbus, Ohio.
19. 1 Common Skunk (*Mephitis mephitis*). Presented by Edward Pugh, Philadelphia.
20. 2 Green Lizards (*Anolis principalis*). Presented by J. N. Taggart, Philadelphia.
21. 2 Red-tailed Hawks (*Buteo borealis*). Presented by Jones & Co., Philadelphia.
 1 Fox-colored Sparrow (*Passerella iliaca*). Presented by P. F. Harpel, Philadelphia.
 3 Prairie Wolves (*Canis latrans*). Born in Garden.
22. 1 Great Kangaroo (*Macropus giganteus*). Born in Garden.
 1 Angora Goat (*Capra hircus*). Purchased.
23. 1 Broad-winged Hawk (*Buteo pennsylvanicum*). Presented by Charles A. Hess, Philadelphia.
 1 Sulphur-crested Cockatoo (*Cacatua galerita*).
 1 Roseate Cockatoo (*Cacatua roseicapilla*).
 1 Slender-billed Cockatoo (*Liometis tenuirostris*).
 2 Pennant's Parrakeets (*Platycercus pennanti*).
 2 Rosehill Parrakeets (*Platycercus eximius*).
 2 Blood-rumped Parrakeets (*Psephotus haematonotus*).
 2 Yellow-collared Parrakeets (*Platycercus semitorquatus*). } Purchased.

1879.

- April 23. 2 Undulated Grass Parrakeets (*Melopsittacus undulatus*).
 4 Chestnut-eared Finches (*Amadina castanotis*).
 2 Spotted-sided Finches (*Amadina lathamii*).
 2 Chestnut-breasted Finches (*Donacola castaneothorax*).
 2 Maja Finches (*Munia maja*).
 2 Spotted Munias (*Munia undulata*).
 } Purchased.
24. 1 Brown Snake (*Storeria dekayi*).
 3 Water Snakes (*Tropidonotus sipedon*).
 2 Water Snakes (*Tropidonotus leberis*).
 } Presented by Dr. J. H. Pooley, Columbus, Ohio.
25. 1 Buffalo (*Bos americanus*). ♀ Born in Garden.
26. 1 Water Snake (*Tropidonotus leberis*). Presented by Albert Matlook, Philadelphia.
27. 1 Linnet (*Linaria cannabina*). Presented by Frank Eckfeldt, Philadelphia.
30. 1 Brown Snake (*Storeria dekayi*). Presented by Isaac Reiff, Philadelphia.
- May 1. 2 Bald Eagles (*Haliaeetus leucocephalus*).
 2 Great Blue Herons (*Ardea herodias*).
 1 Black Snake (*Bascanion constrictor*).
 1 Hog-nosed Snake (*Heterodon platyrhinos*).
 1 Corn Snake (*Coluber guttatus*).
 1 Garter Snake (*Eutænia sirtalis*).
 1 Chain Snake (*Ophibolus doliiatus triangulus*).
 1 Northern Loon (*Colymbus torquatus*). Purchased.
 } Presented by Smithsonian Institution, Washington, D. C.
2. 1 Brown Bat (*Vespertilio subulatus*). Captured in Garden.
3. 1 Gray Squirrel (*Sciurus carolinensis*). Presented by James H. Anderson, Philadelphia.
- 2 Great Horned Owls (*Bubo virginianus*). Presented by Smithsonian Institution, Washington, D. C.
4. 1 Alligator (*Alligator mississippiensis*). Presented by B. H. Brewster, Jr., Philadelphia.
6. 1 Virginia Deer (*Cervus virginianus*). Presented by S. N. Stokes, Holmesburg, Pa.
7. 1 Pair Fallow Deer (*Cervus dama*). Presented by the Earl of Powis, England.
8. 2 Young Alligators (*Alligator mississippiensis*). Presented by W. G. Fisher, Philadelphia.
9. 1 Black Bear—cub (*Ursus americanus*). Presented by Col. P. Huey, Williamsport, Pa.
10. 2 Alligators (*Alligator mississippiensis*). Presented by A. Westermair, Philadelphia.
12. 1 Hog-nosed Snake (*Heterodon platyrhinos*). Presented by Alfred Reed, Hammonton, N. J.
13. 1 Red Kangaroo (*Macropus rufus*). ♀ Born in Garden.
 2 European Badgers (*Meles taxus*).
 1 Gray Ichneumon (*Herpestes griseus*).
 3 Anubis Baboons (*Cynocephalus anubis*).
 1 Emu (*Dromæus novæ-hollandiæ*).
 1 Scarlet Ibis (*Ibis rubra*).
 3 Bar-headed Geese (*Anser indicus*).
 } Purchased.

1879.

- May 13. 2 Sebastopol Geese. Purchased.
16. 1 Pine Snake (*Pityophis melanoleucus*).
 1 Fence Lizard (*Sceloporus undulatus*).
 1 Bull Frog (*Rana catesbiana*).
 6 Garter Snakes (*Eutania sirtalis*).
 1 Alligator (*Alligator mississippiensis*). Presented by Miss Perkins,
 Philadelphia.
- 1 Brown Capuchin (*Cebus fatuellus*). } Presented by Mr. Bunting,
 17. 1 Virginia Deer (*Cervus virginianus*). } Philadelphia.
19. 4 Red Foxes (*Vulpes fulvus*). Presented by Dewenop & Clayton,
 Mount Pleasant, Del.
- 1 Secretary Vulture (*Gypogeryx serpentarius*). Purchased.
20. 1 Little Black-headed Duck (*Fuligula affinis*). Presented by J. F.
 Bryan, Vincentown, N. J.
22. 1 Virginia Deer (*Cervus virginianus*). Born in Garden.
 4 Ring-necked Pheasants (*Phasianus torquatus*). Purchased.
23. 2 Great Blue Herons (*Ardea herodias*).
 1 Darter (*Plotus ankinga*). } Purchased.
- 10 Red-bellied Terrapins (*Pseudemys rugosa*). Presented by G.
 Fletcher, Philadelphia.
24. 1 Young Alligator (*Alligator mississippiensis*). Presented by Mrs.
 Sheldon, Eddington, Pa.
26. 1 Water Snake (*Tropidonotus sipedon*). Presented by Charles Ald-
 rich, Webster City, Iowa.
27. 7 White-footed Mice (*Hesperomys leucopus*). Born in Garden.
28. 1 Star-nosed Mole (*Condylura cristata*). Presented by Alfred Reed,
 Hammon, N. J.
- 1 Water Snake (*Tropidonotus sipedon*). Presented by H. G. Landis,
 Columbus, Ohio.
29. 2 Ring Doves (*Turtur risorius*).
 1 Nonpareil (*Cyanospiza ciris*). } Presented by Mrs. Hugill,
 Camden, N. J.
- 2 Laughing Kingfishers (*Dacelo gigantea*).
 4 Swainson's Lorikeets (*Tricoglossus novæ-hollandiæ*).
 2 Yellow-collared Parrakeets (*Platycercus semitorquatus*). } Pur-
 1 Gray Parrot (*Psittacus erythacus*). } chased.
31. 1 Pair Javan Chevrotains (*Tragulus javanicus*). Purchased.
- June 4. 1½ English Blackbird (*Turdus merula*). Presented by L. A. Scott,
 Jr., Philadelphia.
5. 1 Opossum and 13 young (*Didelphys virginiana*). Purchased.
6. 1 Angora Goat (*Capra hircus*). Presented by Levi Mostbaum, Phila-
 delphia.
- 1 Barn Owl (*Strix flammea am*). Purchased.
7. 1 Sand-hill Crane (*Grus canadensis*). Presented by Prof. Beal, Iowa
 Agricultural College.
- 1 Raccoon (*Procyon lotor*). Presented by William R. Covy, Camden,
 N. J.
9. 1 Ring-necked Snake (*Diadophis punctatus*). Presented by Dr. Pooley,
 Columbus, Ohio.
- 1 Pair Angora Rabbits. Presented by John Spealler, Philadelphia.
- 1 Hog-nosed Snake (*Heterodon platyrhinos*).

1879.

- June 9. 1 Pair Cheetahs (*Felis jubata*).
 1 Bornean Sun Bear (*Helarctos eurypilus*). ♀ } Purchased.
 1 Chacma Baboon (*Cynocephalus porcarius*). ♀ }
10. 7 Horned Toads (*Phrynosoma cornuta*). Presented by Capt. H. C. Northop, Schooner "Ajax."
11. 1 Black Snake (*Bascanion constrictor*). Presented by Col. T. M. Bryan, Vincentown, N. J.
 1 Woodchuck (*Arctomys monax*). Presented by C. E. Ellis, Haddonfield, N. J.
12. 1 Woodchuck (*Arctomys monax*). Presented by Louis and Walter Lusson, Ardmore, Pa.
 1 Woodchuck (*Arctomys monax*). Presented by C. D. Husbands, Hestonville, Pa.
13. 2 Virginia Deer (*Cervus virginianus*). Born in Garden.
 2 Ring Doves (*Turtur risorius*). Presented by Philip A. Rollins, Philadelphia.
 2 Electrical Eels (*Gymnotus electricus*). Purchased.
14. 1 Black Snake (*Bascanion constrictor*). Presented by Thomas Haefles, Street Road, Pa.
16. 2 Red-crested Cardinals (*Paroaria cucullata*). Presented by James Huston, Philadelphia.
 14 Fence Lizards (*Sceloporus undulatus*). Presented by Col. T. M. Bryan, Vincentown, N. J.
 2 Screech Owls (*Scops asio*). Presented by A. R. Wilson, Philadelphia.
17. 2 Mule Deer (*Cervus macrotis*). Born in Garden.
 1 Fallow Deer (*Cervus dama*). Born in Garden.
 7 Mandarin Ducks (*Aix galericulata*).
 1 Rose-crested Cockatoo (*Cacatua moluccensis*). } Purchased.
 3 Banded Rattlesnakes (*Crotalus horridus*). }
 1 Wild Cat (*Lynx rufus*).
- 78 Finches of the following species:—
 Cutthroat Finch (*Amadina fasciata*).
 Spotted Munias (*Munia undulata*).
 Maja Finch (*Munia maja*).
 Amaduvade Finch (*Estrellda amaduva*).
 Orange-cheeked Finch (*Estrellda melpoda*).
 Black-headed Finch (*Munia malacca*).
 Sharp-tailed Finch (*Munia acuticauda*).
 Bi-colored Finch (*Amadina bicolor*).
18. 1 Elk (*Cervus canadensis*). Born in Garden.
 2 Short-eared Owls (*Brachyotus palustris*). Presented by H. I. Kirk and S. E. Hastings, Philadelphia.
 4 Golden-winged Woodpeckers (*Colaptes auratus*). Presented by Francis X. Geisz, Philadelphia.
19. 1 Brown Snake (*Storeria dekayi*). Presented by J. H. Pooley, Columbus, Ohio.
20. 4 Golden-winged Woodpeckers (*Colaptes auratus*). Presented by Master Worrell Wagner, Germantown, Pa.
21. 1 Woodchuck (*Arctomys monax*). Presented by Jesse S. Walter, Philadelphia.

1879.

- June 23. 3 Hog-nosed Snakes (*Heterodon platyrhinos*). Presented by Col. T.
 3 Garter Snakes (*Eutania sirtalis*). } M. Bryan, Vincen-
 1 Water Snake (*Tropidonotus sipedon*). } town, N. J.
 1 Red-tailed Buzzard (*Buteo borealis*). } Presented.
 1 Broad-winged Buzzard (*Buteo pennsylvanicum*). }
 25. 1 Woodchuck (*Arctomys monax*). Presented by Anthony Braz, Broom-
 all, Pa.
 3 Barn Owls (*Strix flammea am*). Purchased.
 1 Black Snake (*Bascanion constrictor*). Presented by David McCad-
 den, Spread Eagle, Pa.
 13 Opossums (*Didelphys virginiana*). Born in Garden.
 26. 2 Blue Birds (*Sialia sialis*). Presented by P. F. Harpel, Philadelphia.
 2 Young Alligators (*Alligator mississippiensis*). Presented by Annie
 C. Lesley, Philadelphia.
 27. 12 Garter Snakes (*Eutania sirtalis*). Presented by James Carbery,
 Philadelphia.
 2 Collared Peccaries (*Dicotyles torquatus*). Born in Garden.
 28. 1 Horned Toad (*Phrynosoma cornuta*). Presented by George P. Chan-
 dler, Philadelphia.
 29. 1 Raccoon (*Procyon lotor*). Presented by Captain Louis M. Chateau,
 Fairmount Park, Philadelphia.
 30. 1 Opossum and 13 young (*Didelphys virginiana*). Presented by E.
 Crossdale Knight, Huntingdon Valley, Pa.
 1 Mocking Bird (*Turdus polyglottus*). Presented by John S. Ritten-
 house, Germantown, Pa.
 1 Horned Toad (*Phrynosoma cornuta*). Presented by Frank S. West,
 Philadelphia.
 1 Gannet (*Sula bassana*). Purchased.
 1 Pine Snake (*Pityophis melanoleucus*). Presented by Col. T. M.
 Bryan, Vincentown, N. J.
 July 1. 1 Banded Rattlesnake (*Crotalus horridus*). Presented by T. M. Wil-
 liamson, Grand Tower, Illinois.
 1 Pine Snake (*Pityophis melanoleucus*). Presented by Col. T. M.
 Bryan, Vincentown, N. J.
 5. 2 Woodchucks (*Arctomys monax*). Presented by Francis F. Albright,
 Philadelphia.
 8. 1 Red-headed Woodpecker (*Melanerpes erythrocephalus*). Presented
 by Francois Rolling, Philadelphia.
 2 Red-tailed Buzzards (*Buteo borealis*). Presented by Alfred W.
 Hansell, Philadelphia.
 9. 2 Banded Rattlesnakes (*Crotalus horridus*). Presented by Dr. Robert
 P. Harris, Philadelphia.
 2 Collared Peccaries (*Dicotyles torquatus*). Born in Garden.
 1 Virginia Deer (*Cervus virginianus*). Born in Garden.
 10. 1 Crow (*Corvus americanus*). Presented by Charles H. Stephens,
 Philadelphia.
 4 Moccasins (*Ancistrodon piscivorus*).
 3 Black Snakes (*Bascanion constrictor*). } Purchased.
 1 Water Snake (*Tropidonotus fasciatus*). }
 1 Spotted Cavy (*Cælogenys paca*). Purchased.

1879.

- July 11. 1 Marabou Stork (*Leptoptilus crumeniferus*).
 2 Golden Pheasants (*Thaumalea picta*).
 1 Silver Pheasant (*Euplocamus nycthemerus*).
 2 Leadbeater's Cockatoos (*Cacatua leadbeateri*).
 2 Black-tailed Parrakeets (*Polytelis melanurus*).
 2 Slender-billed Cockatoos (*Licmetis tenuirostris*).
 4 Laughing Kingfishers (*Dacelo gigantea*).
 4 Yellow-crested Cockatoos (*Cacatua galerita*).
 2 White-backed Piping Crows (*Gymnorhina leuconota*).
 1 Grand Galago (*Galago crassicaudata*).
 1 Emu (*Dromæus novæ-hollandiæ*).
 1 Ducorp's Cockatoo (*Cacatua ducorpsi*).
 1 Lesser Sulphur-crested Cockatoo (*Cacatua sulphurea*).
 2 Roseate Cockatoos (*Cacatua roseicapilla*).
 1 White Goshawk (*Astur novæ-hollandiæ*).
 2 Hyacinthine Porphyrios (*Porphyrio hyacinthinus*).
 2 White Storks (*Ciconia alba*).
 3 English Pheasants (*Phasianus colchicus*).
 12. 1 Crow (*Corvus americanus*). Presented by Simon B. Eby, Lancaster, Pa.
 13. 1 Crow Blackbird (*Quiscalus purpureus*). Presented by Bernard Simon, Philadelphia.
 15. 1 Rattlesnake (*Crotalus horridus*). Presented by E. S. Turpin, Greensboro, Md.
 16. 1 Nine-banded Armadillo (*Dasypus norem-cinctus*). Purchased.
 17. 1 Mule Deer (*Cervus macrotis*). Born in Garden.
 5 Woodchucks (*Arctomys monax*). Born in Garden.
 21. 2 Ring Doves (*Turtur risorius*). Presented by A. W. Fry, Philadelphia.
 2 White Rats (*Mus decumanus*). Presented by D. W. Kolbe, Philadelphia.
 22. 1 Bald Eagle (*Haliaetus leucocephalus*). Presented by W. S. Major, Frenchtown, N. J.
 28 Fence Lizards (*Sceloporus undulatus*). Presented by J. F. Bryan, Vincentown, N. J.
 24. 1 Least Bittern (*Ardetta exilis*). Presented by Edward Collins, Bryn Mawr, Pa.
 25. 1 Bead Snake (*Cemophora coccinea*). Presented by Col. T. M. Bryan, Vincentown, N. J.
 1 King Snake (*Ophibolus getulus*).
 1 Hog-nosed Snake (*Heterodon platyrhinos*). } Presented by Dr. Kingston, Philadelphia.
 26. 1 Pine Snake (*Pityophis melanoleucus*). Presented by C. E. Fowler, Hammonton, N. J.
 28. 1 Woodchuck (*Arctomys monax*). Presented by W. Barrett, Philadelphia.
- August 2. 27 Water Snakes (*Tropidonotus fasciatus*). Born in Garden.
 3. 2 Red-tailed Hawks (*Buteo borealis*).
 4. 1 Horned Owl (*Bubo virginianus*). Presented by the Square Association of the Moyamensing Hose.
 5. 1 Barn Owl (*Strix flammea*). Purchased.

Purchased.

1879.

- August 8. 1 Opossum (*Didelphys virginiana*). Presented by George R. Snyder, Philadelphia.
9. 32 *Amblystoma mavortium*. } Presented by Prof. E. D. Cope,
10 *Siredon lichenoides*. } Philadelphia.
- 1 Garter Snake (*Eutania sirtalis*). Presented by L. W. Sharpe, Hammonton, N. J.
- 1 Opossum (*Didelphys virginiana*). Presented by L. W. Jones, Philadelphia.
11. 2 Sand Toads (*Bufo vulgaris*). Presented by Captain J. W. Mortimer.
12. 1 Buffalo (*Bison americanus*). ♀ Born in Garden.
16. 1 Rat Kangaroo (*Hyssiprymnus rufescens*). Born in Garden.
- 4 Barn Owls (*Strix flammea*). Purchased.
18. 3 Hog-nosed Snakes (*Heterodon platyrhinos*). }
3 Whip Snakes (*Bascanion flagelliforme*). } Purchased.
3 Black Snakes (*Bascanion constrictor*). }
1 Garter Snake (*Eutania sirtalis*). }
1 Ground Rattlesnake (*Crotalophorus miliarius*). }
9 Water Moccasins (*Ancistrodon piscivorus*). }
20. 1 Red-tailed Hawk (*Buteo borealis*). Presented by Alfred Cooper, Millville, N. J.
- 1 Black Ape (*Cynopithecus niger*). }
1 Moor Macaque (*Macacus maurus*). }
1 Entellus Monkey (*Semnopithecus entellus*). } Purchased.
1 Vervet Monkey (*Cercopithecus lalandii*). }
2 Ashy-black Macaques (*Macacus ocreatus*). }
2 Massasauga Rattlesnakes (*Caudisonia tergemina*). }
1 Macaque Monkey (*Macacus cynomolgus*). }
21. 2 Crows (*Corvus americanus*). Presented by Whitney Bros., Bryn Mawr, Pa.
22. 1 Lop-eared Rabbit. Presented by Frank A. Stewart, Philadelphia.
- 1 Ground Hog (*Arctomys monax*). Presented by Captain C. L. Creighton, Easton, Pa.
- 1 Sulphur-crested Cockatoo (*Cacatua galerita*). Presented by Dr. D. Davidson, Philadelphia.
23. 1 Opossum (*Didelphys virginiana*). Presented by Louis Roberts, Bucks county, Pa.
- 1 Gopher (*Spermophilus franklinii*). Presented by Benj. V. Marsh, Philadelphia.
26. 1 Bittern (*Botaurus minor*). Presented by J. H. Tyson, Willow Grove, Pa.
27. 1 Clapper Rail (*Rallus longirostris*). Presented by M. Goldsmith, Camden, N. J.
28. 1 Pair Muscovy Ducks. Presented by Wm. G. Hughes, Philadelphia.
30. 1 Horned Lizard (*Phrynosoma douglassii*). Presented by J. H. Evans, Philadelphia.
31. 1 Great Kangaroo (*Macropus giganteus*). Born in Garden.
- Sept. 2. 1 Carolina Dove (*Zenaidura carolinensis*). Presented by Samuel H. Johnson, Frankford, Pa.
- 1 Cashmere Goat. Presented by Wm. A. Griswold, Philadelphia.

1879.

- Sept. 3. 1 Opossum and 6 young (*Didelphys virginiana*). Presented by Frank Lingo, Philadelphia.
- 3 Black-handed Spider Monkeys (*Ateles melanochir*). Purchased.
- 1 Brown Capuchin (*Cebus fatuellus*). Presented by C. H. Stoeber, Philadelphia.
4. 1 Great Blue Heron (*Ardea herodias*). Purchased.
6. 1 Silver Pheasant (*Euplocamus nycthemerus*). Received in exchange.
8. 1 Vervet Monkey (*Cercopithecus lalandii*). Presented by John H. Nash, Philadelphia.
- 15 Banded Rattlesnakes (*Crotalus horridus*). Born in Garden.
12. 1 Weeper Capuchin (*Cebus capucinus*). Presented by Mrs. Klenfelter, Philadelphia.
- 1 Bald Eagle (*Haliaetus leucocephalus*). } Presented by
1 Golden Eagle (*Aquila chrysaetos*). } Alex. Thomson and
Miss Thomson.
17. 1 Raccoon (*Procyon lotor*). Presented by Geo. H. Rambo, Hatboro, Pa.
18. 1 Silver-speckled Polish Cock. Presented by C. and W. Sickel, Philadelphia.
22. 1 Say's Rattlesnake (*Crotalus confluentus*). } Purchased.
1 Bald Eagle (*Haliaetus leucocephalus*). }
23. 1 Parasitic Jaeger Gull (*Stercorarius parasiticus*). Presented by Harry Cochran, Philadelphia.
24. 13 Opossums (*Didelphys virginiana*). }
11 Opossums (*Didelphys virginiana*). } Born in Garden.
5 Water Moccasins (*Ancistrodon piscivorus*). }
- 1 Night Heron (*Nyctiardea grisea*). Presented by Mrs. Heigley, East Falls Station.
29. 1 Booby Gannet (*Sula fiber*). Presented by Wm. H. Rocap, Philadelphia.
- 2 Rabbits. Presented by James Adams, Jr., Philadelphia.
- 2 European Squirrels (*Sciurus vulgaris*). Purchased.
30. 1 Ocelot (*Felis pardalis*). Purchased.
- Oct'r 1. 4 Sparrow Hawks (*Falco sparverius*). Presented by H. M. Wetherill, Germantown.
- 1 Tapir (*Tapirus terrestris*). }
4 Yarell's Curassows (*Crax carunculata*). }
4 Razor-billed Curassows (*Mitua tuberosa*). }
1 Red-breasted Guan (*Penelope pileata*). }
6 Brown Capuchins (*Cebus fatuellus*). }
2 Slender Cebus (*Cebus pallidus*). }
1 Trumpeter (*Psophia crepitans*). }
18 Boa Constrictors (*Boa constrictor*). } Purchased.
2. 1 Orang-utan (*Simia satyrus*). ♀ }
3 Common Macaques (*Macacus cynomolgus*). }
3 Green Monkeys (*Cercopithecus callitrichus*). }
1 Mozambique Monkey (*C. rufo-viridis*). }
3 Anubis Baboons (*Cynocephalus anubis*). }
1 Diana Monkey (*Cercopithecus diana*). }
1 Saddle-billed Stork (*Xenorhynchus senegalensis*). }

1879.

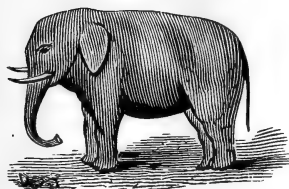
- Oct'r 2. 1 Spotted Eagle (*Aquila navia*). Presented by Rev. Dan. Grestorex, London, England.
4. 1 Eland (*Oreos canna*). ♀ Received in exchange.
- 2 Black Wolves (*Canis occidentalis ater*). Received in exchange.
6. 1 Ocelot (*Felis pardalis*). Purchased.
- 1 Horned Toad (*Phrynosoma cornuta*). Presented by G. H. Parker, Philadelphia.
7. 1 Elk (*Cervus canadensis*). ♀ Born in Garden.
8. 1 Hog-nosed Snake (*Heterodon simus nasicus*). } Presented by
1 Rattlesnake (*Crotalus confluentus*). } Dr. H. C. Chapman,
Philadelphia.
- 1 Red and Blue Macaw (*Ara macao*). Presented by C. Merckshagen, Philadelphia.
- 1 Horned Toad (*Phrynosoma cornuta*). Presented by W. Holbart Brown, Jr., Philadelphia.
14. 2 Barn Owls (*Strix flammea*). Purchased.
17. 1 Florida Gallinule (*Gallinula galeata*). Presented by John Ritchie, Philadelphia.
25. 2 Coatis (*Nasua nasica*). Purchased.
26. 2 Screech Owls (*Scops asio*). Presented by David Shuster, Philadelphia.
27. 1 Coot (*Fulica americana*). Presented by D. F. Boniel, Philadelphia.
31. 1 Soft-shelled Turtle (*Aspionectes nuchalis*). Presented by S. A. LaBarth, Philadelphia.
- Nov'r 1. 1 Alligator (*Alligator mississippiensis*). Presented by Mrs. H. A. Randolph, Philadelphia.
- 6 Garter Snakes (*Eutania sirtalis*). } Presented by
1 Water Snake (*Tropidonotus sipedon*). } G. H. Parker,
2 Brown Snakes (*Storeria dekayi*). } Philadelphia.
4. 1 Javan Chevrotain (*Tragulus javanicus*). Born in Garden.
18. 2 Pinche Monkeys (*Midas ædipus*). Presented by Robert A. Packer, Sayre, Pa.
19. 1 Red-tailed Hawk (*Buteo borealis*). Presented by J. H. Derstein, Bucks county, Pa.
- Dec'r 4. 1 Red-headed Duck (*Fuligula ferina*). Presented.
- 1 Red-tailed Hawk (*Buteo borealis*). Presented by Albert Moore, Philadelphia.
13. 1 Squirrel Monkey (*Saimaris ustus*). Purchased.
16. 1 Snowy Owl (*Nyctea nivea*). Presented.
19. 1 Mazame Deer (*Cervus campestris*). ♀ Born in Garden.
23. 1 Red-tailed Buzzard (*Buteo borealis*). Presented by John Christian, Philadelphia.
29. 1 Great-horned Owl (*Bubo virginianus*). Presented by Henry Archer, Philadelphia.

1880.

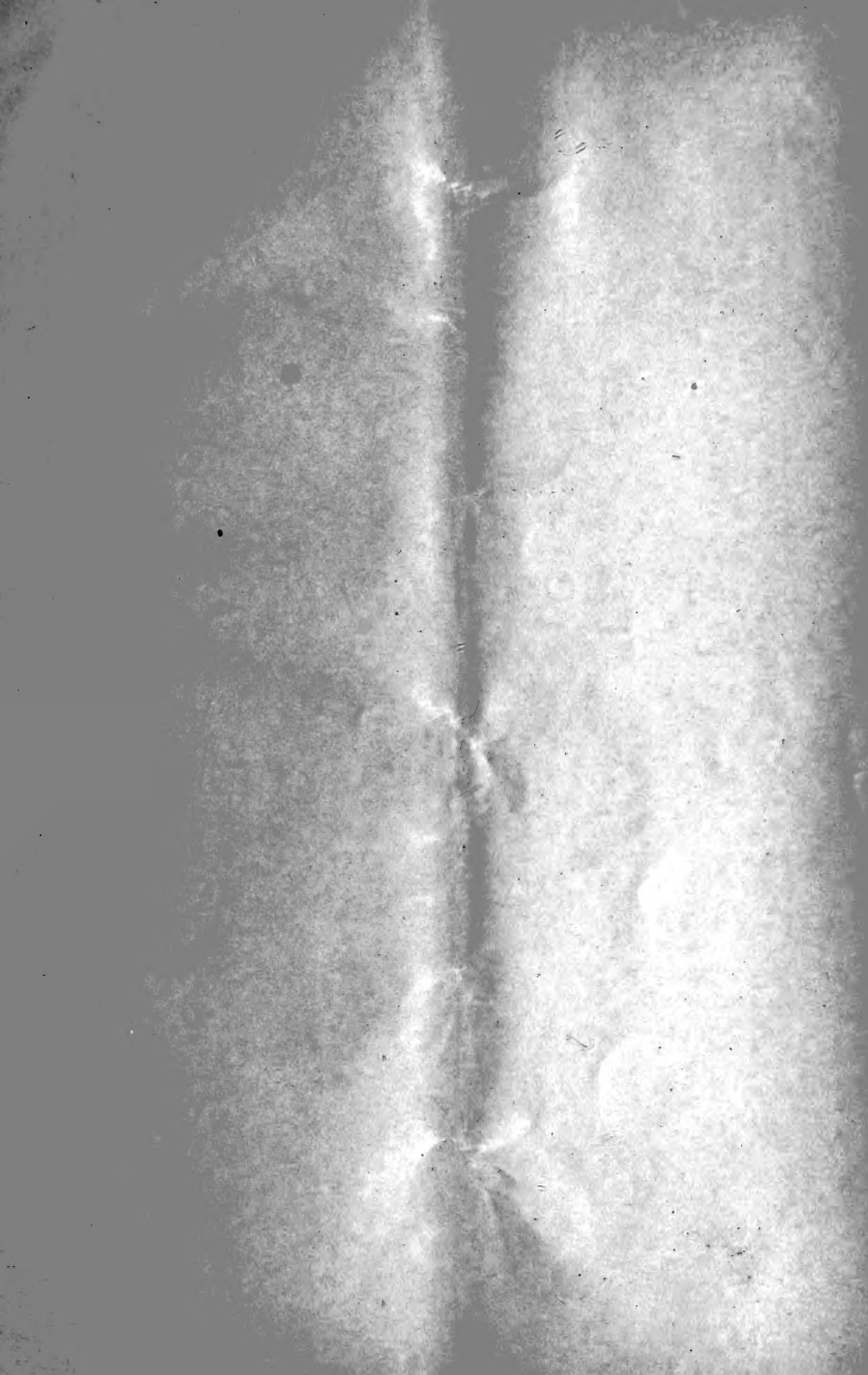
- Jan'y 1. 1 Great-horned Owl (*Bubo virginianus*). Presented by J. D. Deyarmon, Phimpou, Ohio.
2. 1 Red Fox (*Vulpes fulvus*). Presented by Ridgway Brothers, Camden, N. J.

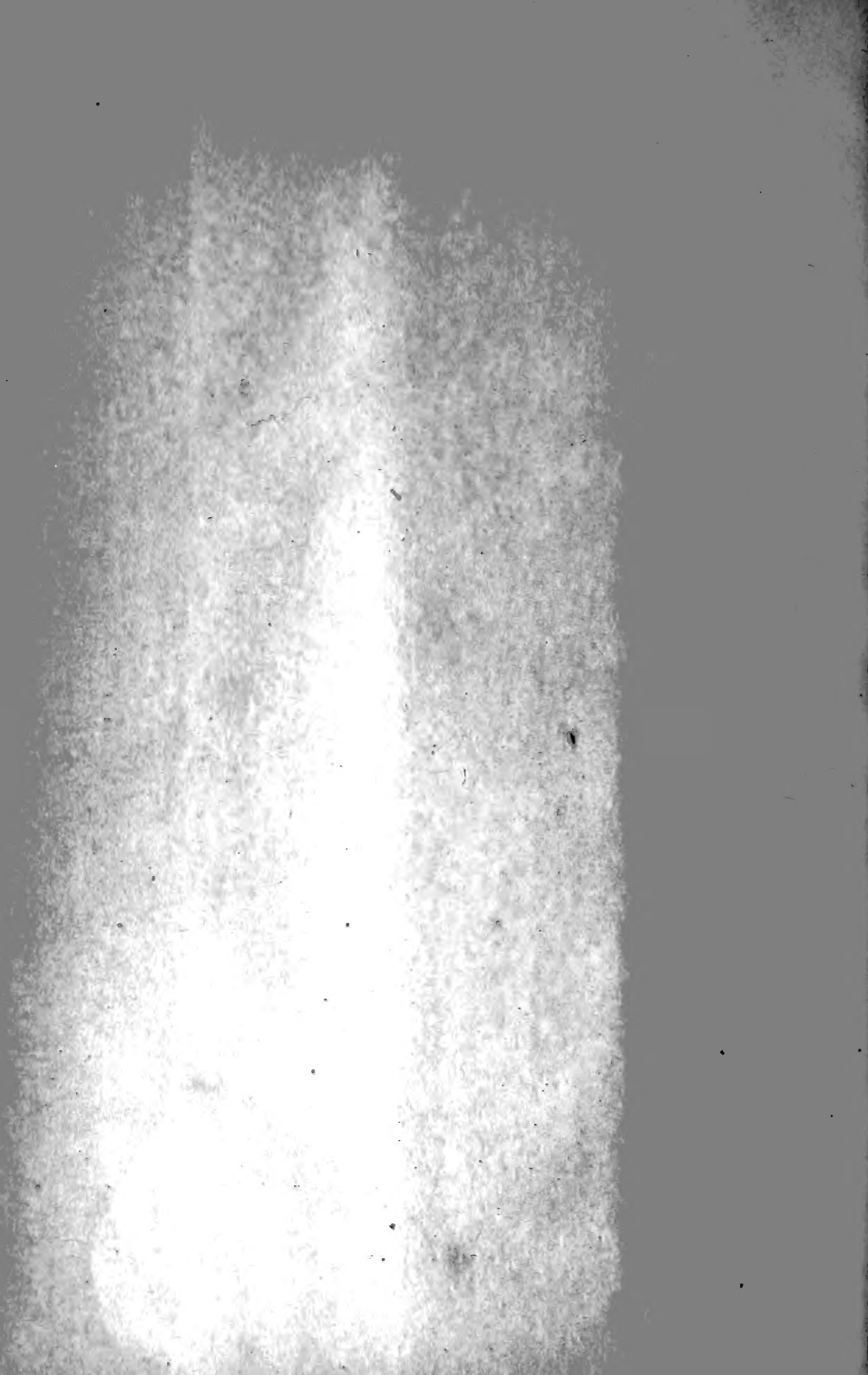
1879.

- Jan'y 2. 1 Alligator (*Alligator mississippiensis*). Presented by Mrs. Drinker, Philadelphia.
3. 1 Screech Owl (*Scops ario*). Presented by J. W. Worrall, Philadelphia.
- 1 Raccoon (*Procyon lotor*). Presented by Mrs. A. Gelbard, Philadelphia.
7. 1 Great-horned Owl (*Bubo virginianus*). Presented by B. M. Yowells, Easton, Pa.
24. 1 Red Kangaroo (*Marcopus rufus*).
 1 Great Kangaroo (*Macropus giganteus*). } Born in Garden.
31. 1 Barn Owl (*Strix flammea*). Presented by Josie Williams, Philadelphia.
- 3 Coypus (*Myopotamus coypu*). Presented by John B. Stetson & Co., Philadelphia.
- Feb'y, 2. 1 Valley Quail (*Lophortyx californianus*). Presented by Gideon Clark, Philadelphia.
- 2 Chimpanzees (*Troglodytes niger*).
 1 Orang-utan (*Simia satyrus*). ♀
 3 Mandrills (*Cynocephalus mormon*).
 4 Vulturine Guinea-fowl (*Numida vulturina*). } Purchased.
5. Red-shouldered Hawk (*Buteo lineatus*). Presented by C. B. Horner, Philadelphia.
9. 2 Guinea Pigs (*Cavia caprera*). Presented by Abbott Thurlow, Philadelphia.
14. 1 Opossum (*Didelphys virginiana*). Presented by Dr. John Berry, Philadelphia.
20. 1 Red-shouldered Buzzard (*Buteo lineatus*). Presented by Col. T. M. Bryan, Vincentown, N. J.
21. 1 Red-tailed Buzzard (*Buteo borealis*). Presented by M. C. Work, Philadelphia.









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